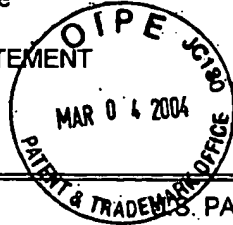


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M.Feng, N. Holonyak, & W. Hafez

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PATENT DOCUMENTS

Exam. Init.	Document Number	Date	Name	Class	Sub Class	filing date if appropriate
	2,569,347	9/25/51	W. Shockley			
	4,485,391	11/27/84	Poulain et al.	357	19	

FOREIGN PATENT DOCUMENTS

Init.	Document Number	Date	Country	Class	Sub Class	Translation Yes/No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	P. Grossman, and J. Choma, Jr., "Large Signal Modeling of HBT's Including Self-Heating and Transit Time Effects" IEEE Transactons On Microwave Theory And Techniques, Vol. 40, No. 3, March 1992.
	Y. Mori, J. Shibata, Y. Sasai, H. Serizawa, and T. Kajiwara, "Operation Principle Of The InGaAsP/InP Laser Transistor", Appl. Phys. Lett. 47(7), 1 October 1985.
	J. Genoe, C. Van Hoof, K. Fobelets, R. Mertens, and G. Borghs, "pnp Resonant Tunneling Light Emitting Transistor" Appl. Phys. Lett. 62 (9), 31 August 1992.
	P. Berger, N. Chand, and N. Dutta, "An AlGaAs Double-Heterojunction Bipolar Transistor Grown By Molecular-Beam Epitaxy", Appl. Phys. Lett. 59 (9), 26 August 1991.
	E. Zanoni, L. Vendrame, and P. Pavan, "Hot-Electron Electroluminescence in AlGaAs/GaAs Heterojunction Bipolar Transistors", Appl. Phys. Lett. 62 (4), 25 January 1993.
	M. Harris, B. Wagner, S. Halpern and M. Dobbs, "Full Two-Dimensional Electroluminescent (EL) Analysis of GaAs/AlGaAs HBTs", IEEE 99CH36296. 37 th Annual International Reliability Physics Symposium, San Diego., California, 1999.
	K. Wang, P. Asbeck, M. Chang, G. Sullivan, and D. Millar, "Noninterfering Optical Method Of HBT Circuit Evaluation", Electronics Letters, Vol. 25 No. 17, 17 August 1989.

EXAMINER

DATE CONSIDERED

10/04

Examiner: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	J. Bardeen and W.H. Brattain, "The Transistor, A Semi-conductor Triode," Physical Review 74, 230-234 (1948).
	W. Shockley, "The Theory of p-n Junctions in Semiconductors and p-n Junction Transistors," Bell System Technology Journal 28, 435-489 (1949).
	R.N. Hall, G.E. Fenner, J.D. Kingsley, T.J. Soltys, and R.O. Carlson, "Coherent Light Emission From GaAs Junctions," Phys. Rev. Lett., vol 9. pp. 366-368, Nov. 1, 1962.
	M.I. Nathan, W.P. Dumke, G. Burns, F.H. Dill, Jr., and G. Lasher, "Stimulated Emission of Radiation From GaAs p-n Junction," Appl. Phys. Lett., vol. 1, pp. 62-64. Nov. 1962.
	N. Holonyak, Jr. and S.F. Bevacqua, "Coherent (Visible) Light Emission From GaAs $_{1-x}P_x$ Junctions," Appl. Phys. Lett., vol. 1, pp. 82-83, Dec. 1962.
	T.M. Quist, R.H. Rediker, R.J. Keyes, W.E. Krag, B. Lax, A.L. McWhorter, and H.J. Zeiger, "Semiconductor Maser of GaAs," Appl. Phys. Lett., vol. 1. pp. 91-92, Nov. 1962.
	H. Kroemer, "Theory Of A Wide-Gap Emitter For Transistors," Proceedings of the IRE 45, 1535-1537 (1957).
	W. Hafez, J.W. Lai and M. Feng, "InP/InGaAs SHBTs with 75 nm Collector and $f_T > 500$ GHz", Electronic Letters, Vol. 39, No. 20, Oct., 2003.
	W. Hafez, J.W. Lai, and M. Feng "Record f_T and $f_T + f_{max}$ Performance of InP/InGaAs Single Heterojunction Bipolar Transistors," Electronics Letters, May, 2003.
	W. Hafez, J.W. Lai, and M. Feng. "Sub-micron InP/InGaAs Single Heterojunction Bipolar Transistors With f_T of 377 GHz," IEEE Electron Device Letters, May, 2003.
	W. Hafez, J.W. Lai and M. Feng, "Vertical scaling of 0.25 um Emitter InP/InGaAs Single Heterojunction Bipolar Transistors With f_T of 452 GHz," IEEE Electron Devices Letters, July, 2003.

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J. H. Chen

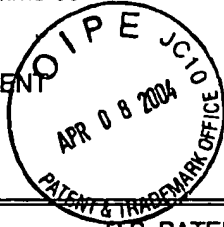
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U.S. PATENT DOCUMENTS

Exam. Init.	Document Number	Date	Name	Class	Sub Class	filing date if appropriate
	5,389,804	02/14/95	Yokoyama et al.	257	197	
	5,399,880	03/21/95	Chand	257	21	
	5,780,880	07/14/98	Enquist	257	197	

FOREIGN PATENT DOCUMENTS

Init.	Document Number	Date	Country	Class	Sub Class	Translation Yes/No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	P. Enquist, A. Paoella, A.S. Morris, F.E. Reed, L. DeBarros, A.J. Tessmer, and J.A. Hutchby, "Performance Evaluation Of Heterojunction Bipolar Transistors Designed For High Optical Gain", Research Triangle Institute, Research Triangle Park, NC, ARL, Research Laboratory, Ft. Monmouth, NJ, Applied Research and Technology, Wake Forest, NC, , IEEE, pgs. 278-287, 1995
	Yukihiko Arai, Masaaki Sakuta, Hiroshi Takano, Takashi Usikubo, Ryoza Furukawa, and Masao Kobayashi, "Optical Devices From AlGaAs-GaAs HBTs Heavily Doped With Amphoteric Si", IEEE Transactoins On Electron Devices, pgs. 632-638, Vo. 42. No. 4, April 1995.

EXAMINER

DATE CONSIDERED

10/04

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